

## **RESOLUTION NO. 05-19-001**

### **OF THE IMPLEMENTING COMMITTEE OF THE EDWARDS AQUIFER HABITAT CONSERVATION PLAN PROGRAM RELATIVE TO ACTION ON THE SCIENCE REVIEW PANEL'S DETERMINATIONS PURSUANT TO SUBSECTION 7.13.7 OF THE FUNDING AND MANAGEMENT AGREEMENT.**

**WHEREAS**, on March 18, 2013, the U.S. Fish and Wildlife Service ("Service") issued Incidental Take Permit No. TE-63663A-1 ("ITP"), as amended, for a fifteen (15) year term, to the Edwards Aquifer Authority, the City of New Braunfels, the City of San Marcos, the City of San Antonio, acting by and through its San Antonio Water System, and Texas State University ("Permittees"), under Section 10(a) (16 U.S.C. § 1539(a)) of the federal Endangered Species Act of 1973; and

**WHEREAS**, Paragraph E of the ITP provides that the ITP is "subject to full and complete compliance with, and implementation of, the EARIP HCP ..."; and

**WHEREAS**, the EARIP HCP document as approved by the Service is entitled *Edwards Aquifer Recovery Implementation Program Habitat Conservation Plan* (Nov. 2012) (prepared by RECON Environmental, Inc., Hicks & Company, Zara Environmental LLC, and BIO-WEST) ("EAHCP"); and

**WHEREAS**, as described in Section 1.1.1 of the EAHCP, the EAHCP takes a 2-phase approach during the 15-year term of the ITP described as follows:

"The approach taken in this HCP incorporates a two-phased implementation strategy. Phase I of the strategy will involve implementation of a package of minimization and mitigation measures that will be implemented very quickly upon issuance of the permit. These measures (described in Chapter 5) provide protection for the species covered by the ITP and their associated ecosystems. An Adaptive Management Process (AMP) (described in Chapter 6) will use information from monitoring data collected during Phase I, along with evaluation of technical and engineering alternatives and improved groundwater, biological and ecological models, to make appropriate modifications, if any are needed, to the Phase I program. Specified additional measures, if necessary to achieve the biological goals, will be implemented during Phase II."; and

**WHEREAS**, pursuant to Section 1.3.2 of the EAHCP and Recital E of the FMA, the period of Phase I is from March 18, 2013 through March 17, 2020, and the period of Phase II is from March 18, 2020 through March 31, 2028; and

**WHEREAS**, Section 9.1.1 of the EAHCP also provides for the development of a "funding and management agreement" between the Permittees with the purpose of such document being to "establish in greater detail the procedures and mutual commitments among the permittees for funding and management of the HCP and adaptive management process"; and

**WHEREAS**, the funding and management agreement as approved and executed by the Permittees is entitled *Funding and Management Agreement by and among the Edwards Aquifer Authority, the City of New Braunfels, the City of San Marcos, the City of San Antonio, acting by and through its San Antonio Water System Board of Trustees, and Texas State University – San Marcos to fund and manage the Habitat Conservation Plan for the Edwards Aquifer Recovery Implementation Program* (eff. Jan. 1, 2012) (“FMA”); and

**WHEREAS**, Section 7.1 of the FMA provides that the purpose of the Adaptive Management Process (“AMP”) is to “ensure the full implementation of species protection provided by the [EAHCP]” and that Article 7 of the FMA provides “the procedural steps and responsibilities of the Parties for making AMP decisions, the respective roles of the Implementing Committee, the Stakeholder Committee, the Science Committee, and the Science Review Panel in relation to AMP decisions, and the actions that will be taken as a result of such decisions”; and

**WHEREAS**, Section 7.3 of the FMA provides that the “AMP related to Phase II Conservation Measures will begin no later than January 31, 2019, and continue for the duration of the Permit Term [of the ITP]”; and

**WHEREAS**, Sections 7.3 and 7.6 of the FMA provide procedures for three levels of AMP decisions: (1) routine (2) nonroutine and (3) strategic, with Routine AMP Decisions involving ongoing, day-to-day matters related to the management and administration of the EAHCP Phase I Conservation Measures, Nonroutine AMP Decisions relating to Conservation Measures which are not Routine AMP Decisions or Strategic AMP Decisions, and Strategic AMP Decisions relating to the selection of Phase II Conservation Measures to be undertaken during Phase II of the ITP (2020-2028); and

**WHEREAS**, on December 10, 2013, pursuant to Section 7.10 of the FMA, the EAA Board of Directors approved a contract with the National Academies of the National Academy of Science to establish an independent Science Review Panel (“SRP”) to, among other things, “upon request ... definitively determine if the Scientific Record establishes each of the conclusions required in Subsection 7.13.7 [of the FMA] and explain its determinations”; and

**WHEREAS**, pursuant to Subsection 7.13.6 of the FMA, the Program Manager requested that the SRP make the determinations required by Subsection 7.13.7 of the FMA and that such determinations be provided in a written report; and

**WHEREAS**, pursuant to Subsection 7.13.6 of the FMA, on or about September 26, 2018, the SRP delivered to the Program Manager a “prepublication copy” of its report entitled *National Research Council of the National Academies, Review the Edwards Aquifer Habitat Conservation Plan Report 3* (2018) (“SRP Report 3”) which contained the determinations required by Subsection 7.13.7 of the FMA, and on or about December 7, 2018, the SRP delivered the final of such report to the Program Manager; and

**WHEREAS**, pursuant to Subsection 7.13.6 of the FMA, on or about October 9, 2018, the Program Manager distributed the SRP report to the Implementing Committee, the Stakeholder

Committee, and the Science Committee; and

**WHEREAS**, the Program Manager has reviewed the SRP report and, on November 29 and December 5, 2018, presented the EAHCP staff findings and recommendations to the 2018 Comprehensive Phase II Work Plan Work Group (“Ph. II Work Group”); and

**WHEREAS**, the Phase II Work Group prepared a report evaluating the Comprehensive Phase II Work Plan, reviewing the SRP Report relative to the Subsection 7.13.7 issues, and making recommendations for possible future actions by the Implementing Committee in light thereof; and

**WHEREAS**, the Program Manager has prepared a memorandum (Exhibit A) evaluating the SRP report’s issues and determinations relative to Subsection 7.13.7, the concerns regarding hydrologic modeling, and the Comprehensive Phase II Work Plan; and

**WHEREAS**, pursuant to Subsection 7.13.7 of the FMA, the Implementing Committee hereby desires to take the actions described below in this Resolution; and

**WHEREAS**, a regular meeting of the Implementing Committee was held on May 23, 2019, at 10:00 a.m., notice having been duly and properly posted in accordance with Subsection 7.7.4 of the FMA; and

**WHEREAS**, Agenda Item 6.4 was listed for the following purpose:

**“CONSIDER RECOMMENDATION TO ADOPT RESOLUTION NO. 05-19-001 OF THE IMPLEMENTING COMMITTEE OF THE EDWARDS AQUIFER HABITAT CONSERVATION PLAN PROGRAM RELATIVE TO ACTION ON THE SCIENCE REVIEW PANEL’S DETERMINATIONS PURSUANT TO SUBSECTION 7.13.7 OF THE FUNDING AND MANAGEMENT AGREEMENT.”; and**

**WHEREAS**, all members of the Implementing Committee were present and constituted a quorum; and

**WHEREAS**, the Implementing Committee considered the above Agenda Item that is the subject of this Resolution; and

**WHEREAS**, a unanimous vote of the Implementing Committee passed on, voted in favor of, and adopted this Resolution; and

**WHEREAS**, it is in the public interest that the Implementing Committee take the actions stated herein pursuant to Subsection 7.13.7 of the FMA.

**NOW, THEREFORE, BE IT RESOLVED BY THE IMPLEMENTING COMMITTEE OF THE EDWARDS AQUIFER HABITAT CONSERVATION PLAN PROGRAM THAT:**

Section 1. The recitals set out above are found to be true and correct, and they are hereby

adopted by the Implementing Committee and are made a part of this Resolution for all purposes.

Section 2. The Implementing Committee hereby makes the following findings and conclusions and directs the Program Manager to take the following actions:

2.1 **FMA Subsec. 7.13.7.a.:** The SRP did not determine that there were any Covered Species for which the Scientific Record established that any of the existing Biological Objectives were not necessary to meet any of the existing Biological Goals for such species. Accordingly, for Phase II of the ITP, the Program Manager is requested to take no action to propose the discontinuance of any of the existing Biological Objectives applicable to any of the Covered Species.

2.2 **FMA Subsec. 7.13.7.b.:** The SRP did not determine that there were any Covered Species for which the Scientific Record established that any of the existing Biological Objectives were not adequate to achieve any of the existing Biological Goals for such species. Accordingly, for Phase II of the ITP, the Program Manager is requested to take no action to propose any changes to any of the existing Biological Objectives applicable to any of the Covered Species.

2.3 **FMA Subsec. 7.13.7.c.:** The SRP did not determine that there were any existing Phase I Conservation Measures for which the Scientific Record established that any of such measures were not needed to achieve any of the existing Biological Objectives. Accordingly, for Phase II of the ITP, the Program Manager is requested to take no action to propose the discontinuance of any of the existing Phase I Conservation Measures.

2.4 **FMA Subsec. 7.13.7.d.:** Except as provided in Section 2.6, the SRP determined that the Scientific Record established that the existing Phase I Conservation Measures were achieving the Biological Objectives. Accordingly, except as provided in Section 2.6, for Phase II of the ITP, the Program Manager is requested to take no action to propose the Presumptive Phase II Conservation Measure, or any other new Phase II Conservation Measure. However, the Program Manager has proposed to the Science Committee changes to the Voluntary Irrigation Suspension Program Option (VISPO) (EAHCP § 5.1.2) as may be necessary for the modeled results of the implementation of such measures to demonstrate that they are sufficient to achieve the flow-related Biological Objective for springflow at Comal Springs of a minimum 30 cfs as stated in Section 4.1.1.1 on Table 4-2 of the EAHCP utilizing the procedures for a Nonroutine AMP Decision set forth in Section 7.12.

2.5 **FMA Subsec. 7.13.7.e.:** The SRP did not determine that the Scientific Record established that the existing Phase I Conservation Measures were not achieving the Biological Objectives as provided for in Subsection 7.13.7.d., it is unnecessary to consider any action to be taken under Subsection 7.13.7.e. Accordingly, for Phase II of the ITP, the Program Manager is requested to take no

action to propose any changes to the existing Phase I Conservation Measures other than that set out in Section 2.4 relative to VISPO.

2.6 FMA Subsec. 7.13.7.f.: The SRP determined that the Scientific Record was inconclusive about whether the following Phase I Conservation Measure – Native Riparian Habitat Restoration EAHCP § 5.2.8 – was achieving the following Biological Objectives, relative to the Comal Springs riffle beetle (*Heterelmis comalensis*), described in Chapter 4-12 of the EAHCP: 1) “Aquifer water quality should not exceed a 10 percent deviation (daily average) from historically recorded water quality conditions (long-term average) within the Edwards Aquifer as measured issuing from the spring openings at Comal Springs.” 2) “Active restoration of riparian habitat adjacent to spring openings (Spring Run 3 and Western Shoreline) will be implemented to limit the sedimentation that is experienced following rainfall events.” Accordingly, the Program Manager is requested to engage the Comal Springs Riffle Beetle Work Group in order to address issues raised by the SRP in the Scientific Record.

Section 3. The Program Manager is directed and authorized to submit this Resolution to the Service for its information and records, and to the governing bodies of the Permittees, the Science Committee, the Stakeholder Committee, and other interested parties requesting a copy.

Section 4. The terms and provisions of this Resolution shall be deemed severable and if the validity of any section, subsection, sentence, clause, or phrase of this Resolution should be declared invalid, the same shall not affect the validity of any other section, subsection, sentence, clause, or phrase of this Resolution.

Section 5. This Resolution shall become effective from and after its adoption.

**PASSED AND APPROVED BY THE IMPLEMENTING COMMITTEE OF THE EDWARDS AQUIFER HABITAT CONSERVATION PLAN PROGRAM THIS 23<sup>rd</sup> DAY OF MAY, 2019.**

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Mark Enders, City of New Braunfels  
Chairman  
EAHCP Implementing Committee

**ATTEST:**

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Robert Mace, Texas State University  
Secretary  
EAHCP Implementing Committee

**APPROVED AS TO FORM:**

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Darcy Alan Frownfelter  
Implementing Committee Parliamentarian and  
General Counsel to the Edwards Aquifer Authority

## EXHIBIT A



### MEMORANDUM

**To:** EAHCP Implementing Committee  
**From:** Scott Storment, EAHCP Program Manager  
**Date:** March 18, 2019  
**Subject:** EAHCP National Academies of Sciences *Report 3* and Funding and Management Agreement § 7.13.7

#### **Introduction:**

The Edwards Aquifer Habitat Conservation Plan (EAHCP) is currently transitioning from Phase I (2013-2020) to Phase II (2020-2028) of the Incidental Take Permit (#TE-63663A-1). As described in Section 7.14 of the Funding and Management Agreement (FMA), the Strategic Adaptive Management Process defines this transition from Phase I to Phase II as a coordinated review period of the Phase I Conservation Measures and dictates the direction of the Phase II Conservation Measures and management activities.

The most critical component of this process is the evaluation of the EAHCP program and recommendations provided by the Science Review Panel ("National Academies of Sciences" or "NAS"), as required per FMA Section 7.10.

The purpose of this memorandum is to summarize the National Academies of Sciences' *Review of the Edwards Aquifer Habitat Conservation Plan: Report 3* findings and conclusions and to describe the actions required pursuant to Section 7.13.7 of the FMA relative to the third and final report.

#### **National Academies of Sciences *Review of the Edwards Aquifer Habitat Conservation Plan: Report 3***

To assist in the evaluation of Phase I Conservation Measures, the EAHCP requested the involvement of NAS to serve as the mandated "Science Review Panel" to review and advise on the minimization and mitigation activities used to implement restoration, conservation and environmental protection initiatives for the benefit of the threatened and endangered species listed in the Incidental Take Permit and their habitat. From 2014-2018, NAS produced three reports as a result of an in-depth study and evaluation of the EAHCP minimization and mitigation measures.

The third and final report, *Review of the Edwards Aquifer Habitat Conservation Plan: Report 3* (NAS Report 3), was submitted to the EAHCP in the fall of 2018 and provided an analysis on the effectiveness of the Conservation Measures in meeting the Biological Objectives; and the likelihood of the Biological Objectives achieving the Biological Goals for the Covered Species in the EAHCP.

Of the eight threatened and endangered species listed in the EAHCP, four are considered indicator species — fountain darter, Comal Springs riffle beetle, Texas wild-rice and the San Marcos salamander — and were used as representatives for the other listed species throughout NAS Report 3. These four species were selected based on their sensitivity to environmental changes, therefore, providing a guide to the health of the Spring systems and the success or failure of the conservation efforts of the EAHCP.

In reviewing the effectiveness of the Conservation Measures in meeting the Biological Objectives, NAS identified five major categories of the minimization and mitigation measures implemented in the EAHCP — flow protection, water quality protection, submerged aquatic vegetation management, recreation management and riparian restoration. NAS assessed the effectiveness of the five major Conservation Measure categories in achieving the Biological Objectives for the Covered Species, and provided four possible ratings: *highly effective*, *effective*, *somewhat effective* and *unable to determine*.

Based on scientific analysis and information provided, NAS determined the following (NAS Report 3 pg. 7):

- The flow protection measures will be *effective* in meeting the flow component of the Biological Objectives for all listed species.
- The water quality protection measures, focusing primarily on stormwater control, will be *somewhat effective* in meeting the water quality component of the Biological Objectives for the fountain darter in the Comal and San Marcos stream systems.
- The submerged aquatic vegetation (SAV) restoration measures, including the replanting of Texas wild-rice, will be *effective* in meeting the habitat component of the Biological Objectives for Texas wild-rice and the fountain darter.
- The recreation management measures will be *effective* in meeting the habitat component of the Biological Objectives for the San Marcos salamander and Texas wild-rice.
- The Committee is *unable to determine* whether riparian management measures will contribute to achieving the Biological Objectives of the Comal Springs riffle beetle.

In assessing the likelihood of the Biological Objectives achieving the Biological Goals, NAS identified three similar components implemented within the objectives — flow, water quality and habitat. NAS reviewed the combined effects of the three predominant objectives to determine their likelihood of achieving the Biological Goals, in respect to the Covered Species, and provided four possible ratings: *highly likely*, *likely*, *somewhat likely* and *unlikely*.

Based on scientific analysis and information provided, the NAS determined the following (NAS Report 3 pg. 5):



- It is *likely* that the Biological Objectives will meet the Biological Goals for the fountain darter.
- It is *likely* that the Biological Objectives will meet the Biological Goals for Texas wild-rice.
- It is *somewhat likely* that the Biological Objectives will meet the Biological Goals for the Comal Springs riffle beetle.
- It is *somewhat likely* that the Biological Objectives will meet the Biological Goals for the San Marcos salamander.

The findings and conclusions from the *NAS Report 3* are the most critical component to the EAHCP Strategic Adaptive Management Process and the development of the Comprehensive Phase II Work Plan. Section 7.13.7 of the FMA details the actions that may be taken to address the determinations provided in the NAS consensus report and identifies the actions that are to be implemented based on those determinations. Moreover, the required actions are determined by the following findings (FMA § 7.13.7 a-f): a) If Some Objectives Not Necessary; b) If Objectives Are Not Adequate; c) If Conservation Measures Not Needed; d) If Phase I Measures Are Achieving Objectives; e) if Phase I Measures Are Not Achieving Objectives; and f) If Review Fails or is Inconclusive.

Considering the conclusions of the *NAS Report 3* and Section 7.13.7 of the FMA, the following was determined:

1. The *NAS Report 3* did not find any:
  - a. Biological Objectives not necessary to meet any of the Biological Goals for the indicator species (FMA § 7.13.7.a).
  - b. Biological Objectives not adequate to meet any of the Biological Goals for the indicator species (FMA § 7.13.7.b).
  - c. Existing Phase I Conservation Measures that were not needed to achieve any of the existing Biological Objectives (FMA § 7.13.7.c).
  - d. Existing Phase I Conservation Measures that were not achieving any of the existing Biological Objectives (FMA § 7.13.7.e).
2. The *NAS Report 3* did find:
  - a. That the existing Phase I Conservation Measures are achieving the Biological Objectives (FMA § 7.13.7.d).
  - b. That the Scientific Record was inconclusive about whether the Phase I Conservation Measure – Native Riparian Habitat Restoration (EAHCP § 5.2.8) – was achieving the Biological Objectives relative to the Comal Springs riffle beetle (FMA § 7.13.7.f).

### **Hydrologic Modeling – Flow Protection Measures**

During Phase I of EAHCP implementation and over the course of NAS program review, the EAA updated the MODFLOW model of the San Antonio segment of the Edwards Aquifer. Output from

this updated model was one of the primary tools used by NAS to make its determination on whether the Conservation Measures related to springflow protection were achieving the flow-related Biological Objectives. NAS *Report 3* determined that the flow protection measures<sup>1</sup> — as implemented — are “effective” in achieving the flow-related Biological Objectives relative to the Covered Species. The panel arrived at this conclusion largely based on the conservative nature of the updated MODFLOW model springflow estimates during periods of low discharge, empirical evidence from the 2014 drought, and the calibration and validation performance results from the model (NAS *Report 3* pg. 109).

The “effective” determination provided in NAS *Report 3* was based on model parameterization that reflected the flow protection programs as they were devised during the EARIP process (i.e. not actual implementation of springflow protection programs) (Appendix K EAHCP). Since the program’s last meeting with NAS in January of 2018, the implementation of flow protection programs through the model has been updated to reflect realized geographical distribution of water enrolled in forbearance programs. A description of this update is included in Pence, 2018 “Strategic Adaptive Management Process Model Runs Inputs and Assumptions.” Using actual Phase I implementation, model runs examining the flow protection programs’ ability to meet the 30 cfs minimum flow objective in the Comal system indicated minimum flows less than 30 cfs in the Comal system.

Utilizing the Nonroutine Adaptive Management Process (AMP) Decision set forth in Section 7.12 of the FMA, the EAHCP Program Manager has proposed a Nonroutine AMP to change Voluntary Irrigation Suspension Program Option (VISPO) forbearance (EAHCP § 5.1.2.) to achieve minimum flow objectives for the Comal system. Modeled results indicate that increasing VISPO forbearance by 1,795 acre-feet is sufficient to achieve the flow-related Biological Objectives for springflow at Comal Springs of a minimum 30 cfs as stated in Section 4.1.1.1 on Table 4-2 of the EAHCP. The new forbearance amount under VISPO will be 41,795 acre-feet.

The Science Committee will review the Nonroutine AMP Proposal and produce a Scientific Evaluation Report (SER). The intent of the Science Committee’s SER is to provide an assessment of the proposed modifications to VISPO to meet EAHCP flow Biological Objectives, to resolve any concerns regarding the effectiveness of the EAHCP flow protection measures for the San Marcos and Comal Spring systems, and to approve the Nonroutine AMP recommendation.

#### **FMA Section 7.13.7 (f) – Comal Springs Riffle Beetle**

Based on the data and information provided, NAS was unable to establish a determination on whether the Phase I Conservation Measure for riparian management – Native Riparian Habitat Restoration (EAHCP § 5.2.8) – was achieving the Biological Objectives relative to the Comal Springs riffle beetle (*Heterelmis comalensis*). Pursuant to Section 7.13.7 (f) of the FMA — if NAS is “unable to make a determination or determines that the Scientific Record is inconclusive about

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<sup>1</sup> These flow protection measures are: Voluntary Irrigation Suspension Program Option (EAHCP § 5.1.2), the Regional Water Conservation Program (EAHCP § 5.1.3), Critical Period Management – Stage V (EAHCP § 5.1.4), and the SAWS ASR for Springflow Protection (EAHCP § 5.5.1).

whether the Phase I Conservation Measures are achieving the Biological Objectives” — the EAHCP Implementing Committee will coordinate with the U.S. Fish and Wildlife Service to initiate an effort to conclude whether the Presumptive Phase II Conservation Measure or another Phase II Conservation Measure is or is not necessary to achieve the Biological Objective relative to the inconclusive findings of the *NAS Report 3*.

EAHCP Comal Springs Riffle Beetle Work Group has been charged with evaluating the issues raised in the *NAS Report 3* and the concerns regarding the riparian management measures used to achieve the Biological Objectives for the Comal Springs riffle beetle. Specifically, the charge of the Work Group includes examining riffle beetle sampling methodology, field activities, and the EAHCP Long-Term Biological Goals for this species.

A report of their assessment will be generated as a product of the Comal Springs Riffle Beetle Work Group and will be provided to the EAHCP Implementing, Stakeholder and Science committees to review. This evaluation is intended to aid in the coordinated effort with the U.S. Fish and Wildlife Service to address the issues presented in *NAS Report 3* and provide recommendations to resolve the issues regarding the riparian management measure’s ability to achieve the Biological Objectives for the Comal Springs riffle beetle.

#### **Comprehensive Phase II Work Plan:**

To initiate the Strategic Adaptive Management Process, a Phase II Work Plan Work Group (Phase II Work Group) convened to review an initial draft of the Comprehensive Phase II Work Plan as a precursor to the review required by the EAHCP Implementing Committee (FMA § 4.3). EAHCP staff and the Phase II Work Group utilized *NAS Report 3*, the EAA MODFLOW Drought of Record scenario, and the first six years of EAHCP monitoring and management experience to assess the Conservation Measures implemented throughout Phase I of the program.

As identified by the EAHCP Strategic Adaptive Management Process whitepaper (Pence, 2018), four potential outcomes guide the direction of the Phase II Conservation Measures.

1. Continuation of Phase I Conservation Measures without change.
2. Continuation of Phase I Conservation Measures with changes or expansion.
3. Continuation of Phase I Conservation Measures, plus new Phase II Conservation Measures.
4. Continuation of Phase I Conservation Measures with changes, plus a new Phase II Conservation Measure.

The members of the Phase II Work Group agreed by consensus that the Phase II Work Plan would be developed to continue the Phase I Conservation Measures with changes or expansion, the second potential outcome. An initial draft of the Comprehensive Phase II Work Plan was a product of the Phase II Work Group.

The 2018 Phase II Work Plan Work Group Report details the development of the Comprehensive Phase II Work Plan and provides a description of the updates that were applied to the draft document.

**Conclusion:**

Resolution No. 05-19-001 was developed to validate the transition from Phase I to Phase II of the EAHCP and to confirm the Conservation Measures to be implemented during Phase II. Moreover, this resolution addresses the inconclusive determination regarding the Comal Springs riffle beetle contained in *NAS Report 3* and clarifies the actions to be taken by the Implementing Committee pursuant to Section 7.13.7 of the FMA, consistent with the guidelines set forth in the Strategic Adaptive Management Process